

Michigan, Illinois, Missouri and Kansas; also collected from West Indies and S. Africa.

Paspalum compactum Roth

Mahendragiri, 1400 m., common in open wet grasslands, fl. 25.x.1979. *Saxena & Brahmam* 3680.

Distribution. Mount Abu (Rajasthan), Khasi and Naga Hills, Nilgiris and other hills in the Southern and Western India.

Paspalum conjugatum Berg.

Mahendragiri, 1400 m., frequent in open marshy grassland, fl. & fr. 22.xi.1979. *Saxena & Brahmam* 3882.

Distribution. Kachar, Assam; Sri Lanka, Malaysia, Singapore and other tropical and subtropical regions of the world.

Plectranthus nilghericus Benth.

Mahendragiri, over 1300 m., in shady places, fl. 25.x.1978. *Saxena & Brahmam* 3611.

REGIONAL RESEARCH LABORATORY,
BHUBANESWAR 751 013,
March 5, 1982.

Distribution. Western Ghats, Anamalai Hills, Nilgiris.

Psychotria fulva Buch.-Ham. ex Hook. f.

Mahendragiri, 1000 m., in semi-evergreen forests, fl. & fr. 21.xi.1979. *Saxena & Brahmam* 3969.

Distribution. Assam and Khasia Hills upto 1200 m., Kachar, Manipur; Burma.

ACKNOWLEDGEMENTS

We are grateful to Prof. P. K. Jena, Director and Dr. P. K. Dutta, Project Coordinator, Regional Research Laboratory, Bhubaneswar for providing the facilities. Thanks are due to the Director and the staff of the Botanical Survey of India, Howrah for extending their cooperation for consulting the Central National Herbarium.

M. BRAHMAM
H. O. SAXENA

34. THE GENUS *CURCUMA* L. (ZINGIBERACEAE) ON
ANDAMAN AND NICOBAR ISLANDS

(With a plate)

The majority of the Zingiberaceae are very poorly known due to the fact that a clear understanding of the genera and species can be had only from live plants. Herbarium materials are hardly sufficient to know the nature and characters of the floral parts. In order to get a better understanding of these obscure species, they were collected, brought under cultivation and studied in live condition when in flower. As a result of these studies the genus *Curcuma* is revised here for these islands.

The genus *Curcuma* with about 45 species is confined to Indo-Malesian region. Apart

from the classical world monograph of the genus by K. Schumann (1904), the genus has been revised for Malaya by R. E. Holttum (1950) and for Assam by A. S. Rao & D. M. Verma (1972). Further van Zijp (1915), van Zijp & Valetton (1917) and Valetton (1919) have published several notes and descriptions of Malaysian and Javan species. Apart from these few papers, very little work has been done on the taxonomy of this genus.

The characteristic features of the genus are the usually aromatic rhizomes, the broad adnate pouched bracts with a cincinnus of several

flowers in each pocket, the tuft of differently coloured coma of sterile bracts at the apex of the spike and the versatile anthers which are often spurred. Some of the species are cultivated for spices, medicinal uses and for food and have often run wild and established themselves in waste ground. Hence the natural distribution of these are obscure.

A review of literature so far published on the flora of Andaman and Nicobar Islands indicate that no species of *Curcuma* has been reported from these islands except the mention of *C. kurzii* by Hooker in Fl. Brit. Ind. 6: 216. 1890 under 'imperfectly known species' with a meagre description. This species is found to be synonymous to the Burmese species *C. petiolata* Roxb. which appears to be the only indigenous species of these islands, always seen in primary forests and never in waste ground. *C. longa*, the well known spice 'Turmeric' is often cultivated near home-steads and fringes of cultivated fields and is very rarely seen in wild condition, *C. mangga* and *C. zedoaria* grow commonly in waste-ground near villages and roadsides and never in primary forest areas and are probably introduced exotics.

CURCUMA

CURCUMA L. Sp. Pl. 1: 2. 1753 et Gen. Pl. ed. 5.3. 1753; K. Schum. in Engler, Pflanzenr. 20: 99-115. 1904; van Zijp in Rec. Trav. Bot. Neerl. 12: 340-347. 1915; van Zijp & Valetton in Rec. Trav. Bot. Neerl. 14: 127-142. 1917; Valetton in Bull. Jard. Bot. Btzg. II, 27: 1-167. 1919; Holttum in Gard. Bull. Singapore 13: 65-72. 1950; A. S. Rao & D. M. Verma in Bull. Bot. Surv. India 14: 121-122. 1972.

Detailed generic descriptions are available in literature.

Distribution: Indo-malesian region and tropical Australia; about 35 species, 4 in Andaman

& Nicobar Islands.

KEY TO THE SPECIES

- 1a. Inflorescence central, arising through the middle of leafshoot; peduncle surrounded by sheaths of normal developed leaves.
 - 2a. Cultivated plants of human habitations and waste grounds; rhizome bright orange yellow inside; petioles less than 1 cm long; floral bracts acute; coma bracts white or white streaked with green; flowers white; anthers spurred..... 1. *C. longa*
 - 2b. Wild plants of primary forest areas; rhizome pale yellow inside; petiole 8-15 cm long; floral bracts obtuse; coma bracts pink or pinkish orange; flowers creamy white; anthers not spurred..... 3. *C. petiolata*
- 1b. Inflorescence lateral, separate from leaf shoots; peduncle not surrounded by sheaths of normal developed leaves.
 - 3a. Rhizome citron yellow within; leaves uniformly green; bracteoles white; median band on lip not with red margins..... 2. *C. mangga*
 - 3b. Rhizome light yellow within; leaves with feather-shaped purplish flush on either side of midrib above throughout its length; bracteoles pinkish at apex; median yellow band on lip with red margins.... 4. *C. zedoaria*

1. *Curcuma longa* L. Sp. Pl. 1: 2. 1753, *pro. max. parte*; Koenig in Retz. Obs. Bot. 3: 72. 1783; Baker in Hook. f. Fl. Brit. Ind. 6: 214. 1890; K. Schum. in Engler, Pflanzenr. 20: 108. 1904; Wealth of India 2: 402, t. 17. 1950; Burt in Notes R. Bot. Gard. Edinb. 35: 212. 1977. [*Manjella kua* Rheede, Hort. Malab. 11: 21, t. 11. 1692]. *C. domestica* Valetton in Bull. Jard. Bot. Btzg. II, 27: 31. 1918; Ridl. Fl. Mal. Pen. 4: 254. 1924; Holtt. in Gard. Bull. Singapore 13: 68. 1950; Backer & Bakh. f. Fl. Java 3: 72. 1968.

Detailed descriptions are available in literature.

Flowering: July-September.

Distribution: Cultivated throughout tropical Asia.

Notes: For detailed discussion on typification and nomenclature see Burt (l.c. 1977). No reference to this species is seen in any of the earlier literature on these islands and seems to be a recent introduction to these islands. This species is often cultivated in Andaman islands and Little Andaman island and sometimes in Nicobar Islands and is not seen in wild anywhere. Rhizomes called 'Turmeric' is used as spice in food preparations and also medicinally in various Ayurvedic preparations. A paste from the rhizomes is applied externally for sprains and wounds.

2. *Curcuma mangga* Val. & van Zijp. in Bull. Jard. Bot. Botz. II, 27: 50, t. 6, f. 1. 1918. Ridl. Fl. Mal. Pen. 4: 254. 1924; Holtt. in Gard. Bull. Singapore 13: 70. 1950; Backer & Bakh. f. Fl. Java 3: 72. 1968.

Primary tubers ovoid, ± 5 cm long, ± 4 cm thick; rhizomes ± 3 cm thick with many close ± 1.5 cm thick branches projecting in all directions, pale dull yellow outside, pale citron yellow inside, tasting bitter; scale leaves subpersistent; roots many, descending and bearing ellipsoid tubers at ends. *Leaf-shoots* 80-100 cm high, bearing 3-5 leaves; sheaths 30-40 cm long; petioles ± 2 cm long; ligules rounded, ± 5 mm long; leaf-blade oblong-elliptic, acute at base, acute or acuminate at apex, 30-50 cm long, 15-23 cm wide, uniformly glossy green above, pale and pubescent beneath. *Peduncle* 18-25 cm long, ± 1 cm thick (*in vivo*), covered with 3-5 rounded mucronate sheaths; spikes oblong, ± 15 cm long, ± 7 cm thick; floral bracts broadly oblong, blunt at apex, ± 4 cm long, connate for less than half-way, green with purple tinge at apex; coma bracts elliptic, acute, ± 7 cm long, almost free, pinkish purple.

Flowers 3-4 in each cincinnus inside each floral bract-pouch, 3-4 cm long; bracteoles elliptic, boat-shaped, prominently keeled and acute at apex, ± 3 cm long, ± 2 cm wide, white.

Calyx obtusely 3-dentate, ± 1 cm long, densely hairy at base.

Corolla-tube ± 2 cm long, cup-shaped towards upper half, tinged with yellow inside; lobes 3, oblong, acute, posterior lobe prominently boat-shaped, mucronate at apex, ± 1.5 cm long, ± 1 cm wide, white. *Staminodes* oblong, with concave median fold as seen from back; inner edges folded under the hood of the dorsal petal, obtuse at apex, ± 1.5 cm long, ± 0.8 cm broad, very pale yellow at upper half, white at lower half. *Lip* obscurely 3-lobed, ± 2.5 cm long, ± 1.8 cm wide, light yellow; midlobe emarginate at apex, yellow with a bright yellow median band. *Filament* constricted at top, ± 6 mm long, ± 3 mm broad, pale yellow; anther ± 4 mm long, white; spurs 2, narrow, slightly curved, ± 2 mm long, white. *Ovary* hairy; stylodes 3-6 mm long; style slender, ± 1.6 cm long; stigma bilobed. *Fruit* oblong, ± 2 cm long, hairy.

Flowering: June-August.

Specimens: S. ANDAMANS: Ferrargunj, collected in vegetative condition and flowered under cultivation on 5 June 1978, Balakrishnan 6747 (PBL).

Distribution: Java, Malaya and Andaman Islands.

Notes: An addition to Flora of India. Common in all waste grounds in open sunny places, roadsides, ditches, streamsides, etc. in South Andamans. This is not seen in other islands and is probably a recent introduction.

3. *Curcuma petiolata* Roxb. Fl. Ind. ed. 1, 1: 37. 1820; Hook. f. in Bot. Mag t. 5821. 1870; Baker in Hook. f. Fl. Brit. Ind. 6: 216. 1890; K. Schum. in Engler, Pflanzenr. 20: 102.



Curcuma petiolata Roxb.

